

Notes on Malesian Fabaceae (Leguminosae-Papilionoideae)

6. The Rare Genus *Burkilliodendron*

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Abstract

Comprehensive descriptions of the rare Malaysian genus *Burkilliodendron* Sastry and its single species *B. album* (Ridl.) Sastry are outlined and its relationship to *Fordia* discussed.

Introduction

Burkilliodendron Sastry is a rare, monotypic Malesian genus of papilionoid legumes. It was described by Ridley (1925) as *Burkillia* but since then has been little studied (Whitmore, 1969; Geesink, 1984). The material of the only species (*B. album*) is very scarce; presently it is known only from the type and one other specimen. The original description is short and in part rather uninformative. For this reason a comprehensive and more detailed description is given below together with some discussion on its position within the family.

Nomenclature

Burkillia Ridley (1925) is an illegitimate name because of the earlier published name of a green alga *Burkillia* West & West (1907, Annals of the Royal Botanic Garden Calcutta 6: 228). It was renamed independently by two authors in 1969 (Sastry, 1969; Whitmore, 1969). The name *Burkilliodendron* Sastry was published first (23 Jan 1969) with *Alloburkillia* Whitmore published later (9 Aug 1969). *Burkilliodendron* is the correct name with its type species now known as *Burkilliodendron album* (Ridl.) Sastry.

Systematics

Ridley (1925) based his description and comments on detailed information from unpublished notes by S.T. Dunn. Ridley considered his new genus to

be closely related to *Fordia* and *Millettia* (probably sect. *Albiflorae*, now *Fordia*, see Dasuki & Schot, 1991). Hence, *Burkilliodendron* has been included in the tribe Millettieae. Geesink (1984) discussed this relationship in his *Scala Millettiarum*: 'The short inflorescence, consisting of two seemingly collateral racemes with rather small and feeble flowers remind me of the Phaseoleae subtribe Glycininae, and more specifically of the genus *Glycine*.' However, his interpretation of the inflorescence is wrong: it is a pseudoraceme, not a raceme (or a panicle, see his Table 6, 3). 'Feeble' flowers are found in Millettieae as well as in Phaseoleae. All my attempts to identify the type specimen of *B. album* invariably lead to Millettieae and *Burkilliodendron*. However, I agree with Geesink (1984) that the separation of the tribes Millettieae and Phaseoleae may not be based on firm ground. Within the tribe Millettieae, the genus seems quite isolated but it is certainly not closely related to *Fordia*.

Comparison with *Fordia*

Superficially *Burkilliodendron* resembles unifoliolate species of *Fordia*. However, the differences between these two genera are numerous (Table 1).

Table 1. Comparison between *Burkilliodendron album*, *Fordia unifoliolata*, and unifoliolate forms of *Fordia albiflora*.

	<i>Burkilliodendron</i>	<i>Fordia unifoliolata</i>	<i>Fordia albiflora</i>
Rachis	present	absent	present
Stipellae	present	absent	absent
Pulvinus	2	1	2
Axillary buds	5 or 7	1 or 3	1 or 3
	strongly flattened	± globular	± globular
Inflorescences per axil	1 to several	1	1, rarely 3
Calyx lobes in bud	not imbricate	imbricate	imbricate
Standard, basal callosities	absent	present	present
Pods	glabrous	velvety	velvety

Specimens

Burkilliodendron album was until recently known only from the type material. This specimen *Burkill & Haniff 12493* (not *Burkill 12498* as cited by Ridley) at Kew consists of two duplicates, one with flowers and one fruit, the other with flowers only. The first is selected as the lectotype, the second as an isolectotype. There is one other duplicate specimen with flowers at Singapore. *Burkill & Haniff 12493* was collected from Durian Pipit, Perak.

To my surprise, a specimen collected in 1993 during the Belum Scientific Expedition (*Latiff et al. 4012*) also belongs to this species. This specimen was collected from the Temenggor Forest Reserve, Gerik, Perak.

Burkilliodendron

Burkilliodendron Sastry, Bull. Bot. Surv. India 10 (1969) 243; Geesink, Leiden Bot. Series 8 (1984) 82. — *Burkillia* Ridl., Fl. Mal. Penins. 5 (1925) 304, nom. illeg. — *Alloburkillia* Whitmore, Gards. Bull. Sing. 24 (1969) 4. — Type: *Burkillia alba* Ridl. [= *Burkilliodendron album* (Ridl.) Sastry].

Shrubs or treelets. *Leaves* unifoliolate; stipules present, caducous; stipellae present, persistent. Axillary buds collateral. *Leaflets* entire. *Inflorescences* axillary, pseudoracemes, 1 to several per axil; flowers 1 or 2 on knob-like brachyblasts. *Bracts* to inflorescences, brachyblasts and flowers present, persistent. *Bracteoles* at the top of the pedicels, persistent. *Calyx* campanulate, bilabiate, lobes not imbricatae; upper lip shortly bidentate; lower lip with 3 longer teeth. *Corolla*: standard without callosities; wings as long as the keel petals. *Stamens* monadelphous, basal fenestrae present; anthers all equal, fertile. *Disc* inconspicuous. *Ovary* very shortly stipitate; ovules 2; style hairy in lower half, stigma terminal, capitate. *Pods* falcate, thin-woody, dehiscent. *Seeds* 2, discoid.

Distribution: One species. Peninsular Malaysia.

Burkilliodendron album (Ridl.) Sastry, Bull. Bot. Surv. India 10 (1969); Geesink, Leiden Bot. Ser. 8 (1984) 82, pl. IV-26. — *Burkillia album* Ridl., Fl. Mal Penins. 5 (1925) 305. — *Alloburkillia alba* (Ridl.) Whitmore, Gards. Bull. Sing. 24 (1969) 4. — Type: Peninsular Malaysia, Perak, *Burkill & Haniff 12493*, lecto (K – flowers and fruit), isolecto (K, SING – flowers).

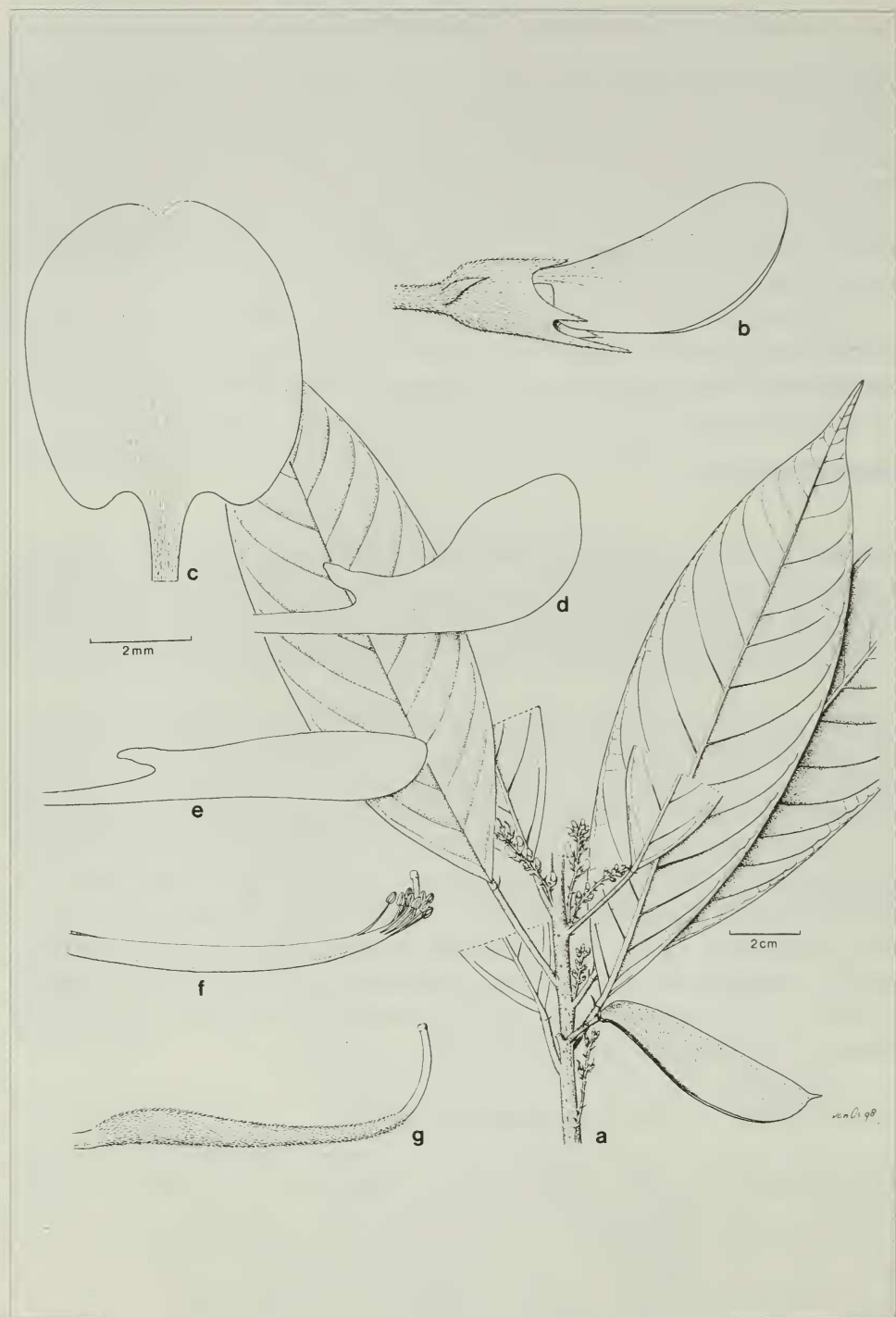


Figure 1. *Burkilliodendron album*. a. branch with flowers and one fruit. b. flower. c. standard. d. keel petal. e. wing. f. stamens. g. ovary.

Figure 1.

Shrubs or treelets, 50—150 cm high. *Twigs* terete, 4—5 mm diam., hirsute. *Stipules* acicular to narrowly triangular, 4—8 x 1 mm, caducous, outside hirsute, inside glabrous. '*Rachis*' 1—3 cm long, hirsute, pulvinus 3 mm long. *Stipellae* acicular, 1—2 mm long, with few hairs. *Leaflets* elliptic to narrowly obovate, 17—27.5 x 5.5—8.5 cm, index 2.9—3.5, base cuneate or rounded, apex acuminate, acumen 20—30 mm long, above hirsute on midrib and nerves, below thinly hirsute, midrib above slightly raised, nerves above $\pm$ flat or slightly raised, 11 or 12 per side, 10—20 mm apart; pulvinus 2—4 mm long. *Inflorescences* 2.5—5 cm long, peduncle up to 1 mm long, hirsute. *Bracts* to the inflorescence acicular, c. 3 x 0.5 mm, outside sericeous, inside glabrous; to brachyblasts and flowers similar to those to the inflorescences, 1.5—1.9 x 0.4—0.9 mm. *Pedicels* 1.5—2.5 mm long. *Bracteoles* acicular to narrowly ovate, 1.2—1.4 x 0.2—0.4 mm, outside sericeous, inside glabrous. *Calyx* 3—4 mm long, tube 2—3 mm long; upper lip $\pm$ ovate, 0.5—1 x 2—4 mm, teeth c. 0.4 mm long; lateral teeth triangular, 1 x 1.5 mm, median tooth triangular, 1.5—2 x 2 mm; outside sericeous, inside of teeth sericeous. Corolla white. *Standard*: claw 2.5—3 mm; blade broadly ovate to obovate, c. 7 x 6 mm, apex slightly retuse, outside sericeous except margins, inside glabrous. *Wings*: claw c. 2.5 mm long; blade elliptic, c. 6 x 1.5 mm, rounded, upper auricle 0.75 mm long; outside with very few hairs, wrinkled in lower part at dorsal side, inside glabrous. *Keel petals*: claw c. 2.5 mm long; blade boat-shaped, c. 6 x 3 mm, rounded, lateral pocket rather wide, c. 2.5 mm long, upper auricle, 0.75 mm long; out- and inside glabrous. *Stamens* 7—9 mm long, free part 3 mm long, glabrous; anthers 0.5 x 0.2—0.4 mm, glabrous. *Ovary* 4 mm long, sericeous; stipe 0.5 mm long, sericeous; style 5 mm long, sericeous in lower half. *Pods* $\pm$ hatchet-shaped, 7 x 1.5 cm, beaked, valves glabrous outside, finely obliquely striate. *Seeds* discoid, c. 8 x 7 mm, hilum c. 1 mm long.

Distribution: Peninsular Malaysia - Perak.

Habitat & ecology: Lowland dipterocarp forest, up to 350 m altitude. Flowering: June, Sept; fruiting: June.

Notes: Known only from two specimens from northern Perak; probably very rare although Burkill & Haniff wrote on their label, 'quite common'.

Additional specimen: Perak – Gerik, Temenggor F.R. A. *Latif et al.* 4012 (L, UKMB).

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